A STUDY TO ASSESS THE LEVEL OF KNOWLEDGE AND ANXIETY AMONG PATIENTS UNDERGOING MAGNETIC RESONACE IMAGING AT SELECTED HOSPITAL, CHENNAI

By

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A DISSERTATION SUBMITTED TO THE TAMIL NADU DR.M.G.R MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR DEGREE OF MASTER OF SCIENCE IN NURSING

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DECLARATION

I, hereby declare that the present dissertation entitled **"A STUDY TO ASSESS THE LEVEL OF KNOWLEDGE AND ANXIETY AMONG PATIENTS UNDERGOING MAGNETIC RESONACE IMAGING AT SELECTED HOSPITAL, CHENNAI",** is the outcome of the original research work undertaken and carried out by me, under the guidance of Mrs.Jayasri. MSc (N),M.Phil.,PhD., Medical Surgical Nursing, Nurse Guide Mrs. M. Kavitha MSc (N) MIOT College of Nursing, Chennai. I also declare that the material of this is not found in anyway, the basis for the award of any Degree or Diploma in this University or other Universities.

Raman. P

IInd Year M.Sc. Nursing

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ABSTRACT

Descriptive study conducted to assess level of knowledge and anxiety among patients undergoing Magnetic Resonance Imaging in selected hospitals, Chennai. The conceptual frame work of the study is based on the von bertalanffy's general system theory. A Quantitative Research approach with descriptive design was used to achieve the objectives of the study. The study was conducted in MIOT International Hospital, Chennai, with a samples size of 110 patients undergoing Magnetic Resonance Imaging. Samples were selected through Non-probability convenient sampling method. The investigator used a demographic variable preformat, structured knowledge questionnaire, Spielbergers state-Anxiety Inventory to collect the data. The data collection tools were validated and reliability was established. The data was collected by an interview method and from patient clinical file. The investigator identified 450 MRI patients. Out of these the investigator selected 110 patients. The demographic characteristics revealed that 32.7% of the patients were above 41-55years of age, 67.3%were male, 77.3% of them were religion Hindu, 50.9% of them were unmarried, 67.3% of them were graduates,57.3% of them from urban area ,57.3% belonged to joint family, 40.9% were pure vegetarians.16.4% patients undergoing Magnetic Resonance Imaging had adequate knowledge, 56.6% had moderately adequate knowledge, 27. 3%had inadequate knowledge. Mean knowledge score was 57.18 with a standard deviation of 18.58. Regarding anxiety of the patients undergoing Magnetic Resonance Imaging 0.0% had severe anxiety, 56.40% had moderate anxiety and 43.60% had low anxiety, overall mean anxiety score was 49.04% with a standard deviation of 11.08. Correlation between overall knowledge and anxiety obtained 'r' value (0.011), at p=0.911, There is no significant correlation at $p<0.05$ level. Gender and type of family has significant association with knowledge. There is no significant association between level of anxiety and demographic variables at $P<0.05$.

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CHAPTER I

INTRODUCTION

Health technology is application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures and systems developed to solve problem and improve quality of life. This includes the pharmaceuticals, devices, procedures and organizational systems used in health care. Medical technology, which is a proper subset of health technology, encompasses a wide range of healthcare products and is used to diagnose, monitor or treat diseases or medical conditions affecting humans. Such technologies applications of medical science are intended to improve the quality of health care delivered through earlier diagnosis, less invasive treatment options and reductions in hospital stays and rehabilitation times.

Medical advancement in technology both in diagnosis and treatment has proved to manage the patient's disease effectively. Magnetic Resonance Imaging is one of the most important medical innovations in the last 25years. Magnetic Resonance Imaging is a medical Imaging technique increasingly used in radiology to visualize the internal structure and functions of the body. The MRI scanner was developed by Mr. Raymond Vashon Dalmatian, the founder of FONAR Co-operation. The first MRI scan was published in 1973 and the First cross-sectional image of a living mouse was published in January 1974. The first studies performed in human beings were published in 1977, MRI was developed from knowledge Magnetic Resonance Imaging is useful in neurological (brain), musculoskeletal, cardiovascular and oncology imaging. There has been an enormous increase in the use of this modality in the clinical setting. Over 80

million MRI procedures are now performed each year worldwide. Over 24 million Magnetic Resonance Imaging procedures were performed in the United States in 2003 in India its use is increasing exponentially.

Any diagnostic procedures can produce anxiety. The patients have to be placed in a narrow tube and feel claustrophobia. Thus claustrophobia in MRI scan is a common problem. Between 1% and 15% of all patients scheduled for Magnetic Resonance Imaging suffer from claustrophobia and cannot be imaged or they require sedation to complete the scan. Thus it can be estimated that worldwide approximately 2,000, 000 procedures cannot be performed prematurely terminated due to claustrophobia.

To most people this translates to a feeling of anxiety or panic (from a level of "just a little anxiety" to severe panic), when in a small or confined area. In Magnetic Resonance Imaging the enclosed space is the inside of the magnet machine. Many individuals who suffer from claustrophobia may require medication to relieve or reduce their anxiety ("sedation") in order to have the MRI successfully performed. Frequently hospital clinicians are reviewing images from MR studies of their patients before seeking formal radiological opinion. This practice is driven by a multitude of factors, including an increased demand placed on hospital services, the wide availability of the picture archiving and communication system, time pressures for patient's treatment.

A number of researchers revealed individuals are fearful of the equipment in relation to the loud acoustic noise delivered during imaging creating, difficulties in communication. There also been range of complaints relating to a lack of information regarding the duration of the scanning and the temperature within the scan. Patients also anticipate pain, discomfort, loss of sense of control

and anxiety related symptoms of panic experiences while being scanned. MRI can be problematic psychologically, respiration and swallowing may be increased in apprehensive patients and motion artifacts' arising from such increased movement result in images diagnostic value. Severe anxiety would result in cancellation of the procedure and rescheduling that would increase costs and delaying evaluation.

A study done in Berlin (2012) to evaluate the incidence of claustrophobia and premature termination of Magnetic Resonance Imaging examination at the Department of Radiology, the result of the study revealed that about 1.97% suffered from claustrophobia and 1.22% prematurely terminated the scan. Another study revealed that out of 40 adults' outpatients undergoing Magnetic Resonance Imaging, 37% reported moderate to severe anxiety. It was found that anxiety in patients undergoing Magnetic Resonance Imaging is a multifaceted phenomenon involving fear of enclosed places (claustrophobia), the unknown as well as apprehension about what the test might reveal. So the study recommended that the best way to avoid traumatizing the patient is to asses these variables in advance.

Reduction of patient's anxiety is very important for the effective and easy way of doing procedures. So Measures should be taken to alleviate anxiety by providing appropriate measures. Lack of information may be the main cause of anxiety. Information to patients may be provided in direct explanation by health personnel or through written materials such leaflet, booklets, or display of posters. Studies have proved that significant improvement in understanding can be achieved by an information Leaflet. An information Leaflet is an easy method of providing written information and serves as a good patient teaching method. It ensures that information contained within a leaflet can be clarified and this can lead to further discussion, also can provide as a reference.

Patients spend most of their time in the hospitals, looked after by nurses. Nurses can provide health teaching, guidance about various aspects of care. From admission to discharge the patients undergo various experiences and procedures. Through the right nursing actions, patient's co-operation and satisfaction can be gained easily. Patient's anxiety is one of the most significant problems faced by the nurses while preparing and sending the patient for any diagnostic procedure or surgery. While preparing the patients for diagnostic procedures nurses can provide sufficient information to patients so as to alleviate the anxiety. Considering the above factors and reviewing the literature investigator felt the need to assess the anxiety level of the patients undergoing magnetic resonance imaging.So as to thisknowledge regarding Magnetic Resonance Imaging.

NEED FOR THE STUDY

Neurologic illness is a principal cause of chronic disease in our society. According to World Health Organization, nearly 7 million people a year are dying of neurological disorder and condition from stroke to migraine effect on billion. The World health organization's news report says that 50 million people worldwide now suffer from epilepsy, and another 24 million from Alzheimer s disease. According to International association of agricultural medicine and rural health incidence of neurological disorder in India, (2013) out of 1000 population people in urban area and 43 in rural are affected with neurological disorders 1998 WHO is currently promoting a number of ways to improve case detection, including the adoption of novel and simple diagnostic procedure.

In neurological conditions, Magnetic Resonance Imaging has potential for identifying cerebral pathology earlier and more clearly than any other diagnostic tests. Magnetic Resonance Imaging is used to plan surgery, radiation therapy and

other interventions associated with brain and nervous system disorder. Magnetic Resonance Imaging is among the safest and most valuable procedures in all of medicine. MRI is one of the newest diagnostic medical imaging technologies that used strong magnetic and pulses of radiation waves to manipulate the natural magnetic properties in the body to generate a visible image.

Another study (2013)was conducted on knowledge and anxiety –related reactions associated with Magnetic Resonance Imaging examinations. It is reported that knowledge and anxiety reaction occur in approximately 4% to 30% of patients undergoing magnetic resonance imaging, ranging from apprehension to moderately reaction that interference with the performance of the test. The criteria for diagnosis or categorization of the reactions and identification of patients at risk are scanty, several management strategies have been proposed, including patient education, drug therapy, and cognitive-behavioral intervention.

Unfortunately, having a MRI may provoke anxiety due to the confined space and the loud noises that are generated by the machine. The prospect of an upcoming MRI makes many people nervous. Magnetic Resonance Imaging frequency creates anxiety and panic. This can cause significant harm to patients and greatly increase costs. 5 -10% of patients undergoing Magnetic Resonance Imaging experience severe claustrophobia or panic attacks, and 30% report milder distress.

Varna (2011) conducted the study ‘to assess the anxiety and its determinants in patients undergoing Magnetic Resonance Imaging. It is shown that out of 40 adults outpatients undergoing Magnetic Resonance Imaging, 95% of the patients completed the procedure and 37% reported moderate to severe anxiety. It is conducted that anxiety in patients undergoing Magnetic Resonance

Imaging is a multifaceted phenomenon involving fear of enclosed places (claustrophobia), pain, the unknown, as well as apprehension about what the test might reveal, and the best way to avoid traumatizing the patient is to assess these variables in advance of the procedure.

Berlin (2012) conducted a study to evaluate the incidence of claustrophobia and premature termination of Magnetic Resonance Imaging examination at Department of Radiology. In this study a total of 5798 reports of 4821 Magnetic Resonance Imaging patients were evaluated. A Total of 95 patients (1.97%) suffered from claustrophobia and 59 (1.22%) prematurely terminated the scanning.

Severe anxiety would result in cancellation of the procedure or rescheduled, that would increase costs and delaying medical evaluation. Over 14% of patients require sedation to complete the examination, adding new costs and risks to the procedure. Many studies have shown that relaxation with guided imagery or hypnosis can reduce patient anxiety and movement, increase patient tolerance of and satisfaction with the procedure. Patient who experience a psychological reaction during a scan may either discontinue the procedure altogether, refuse to undertake Magnetic Resonance Imaging procedures in the future and may also influence other patients needing at medical Magnetic Resonance Imaging in the future. Therefore, measures are taken aimed at reducing this anxiety during Magnetic Resonance Imaging.

Since many patients experience anxiety, sometime so strong that the scan has to be terminated, prior knowledge of what is expected during the exam can effectively decrease anxiety during the procedure. Nurses have an important role in reducing patient anxiety before, during and after any diagnostic procedure.

They must know how to prepare the patient for each test, the appropriate requirements, and nursing measures to perform how to interpret each test. Patient anxiety is one of the most significant problems faced by nurses while preparing patients for Magnetic Resonance Imaging. Considering the above factors and reviewing the literature, the investigator felt there is a need to provide coping strategies to patients to prepare them for Magnetic Resonance Imaging. The anxiety level may vary with the personality of the individual but coping strategies can help all the individuals to overcome their worries.

Statement of the problem

A study to assess the level of knowledge and anxiety among patients undergoing Magnetic Resonance Imaging in selected Hospital, Chennai.

Objectives

1. To assess the knowledge and anxiety among patients undergoing Magnetic Resonance Imaging.
2. To correlate the knowledge and anxiety among patients undergoing Magnetic Resonance Imaging.
3. To find out the association between selected demographic variables with level of anxiety and knowledge among patients undergoing Magnetic Resonance Imaging.

Operational definition

Assess: In this study, it refers to estimating the level of knowledge and anxiety among patients undergoing Magnetic Resonance Imaging.

Anxiety: Inthis study, anxiety refers to perceived pre-procedural emotional status of patients undergoing Magnetic Resonance Imaging as observed on the scores obtained using Spielberg's State- anxiety Inventory.

Knowledge: In this study it refers to awareness' of patients about Magnetic Resonance Imaging is measured by structured questionnaire method.

Patients: In this study, it refers to adult patients undergoing Magnetic Resonance Imaging in the Radiology unit of selected Hospital, Chennai.

Magnetic Resonance Imaging: It is a medical imaging technique used in radiology to visualize the internal structure and functions of the body.

Assumption

The patients who undergo MRI may have less knowledge and experience anxiety.

Delimitations

The study is delimited to;

The patients visiting the radiology unit of selected Hospital, for Magnetic Resonance Imaging procedure.

The sample size is 110.

The data collection period is 6 weeks only.

Projected Outcome

The study will generate information about the knowledge and anxiety among patients undergoing MRI. Based on the findings of the study, further research can be planned to provide adequate knowledge to relieve anxiety among patients undergoing Magnetic Resonance Imaging.

CHAPTER- II

REVIEW OF LITERATURE

This chapter introduces the literature review. The literature review is an important component of research because it reveals similar studies done on a given topic and prevents necessary duplication of studies. It guides the choice of a sound conceptual framework suitable for the research in question while exposing the researcher to the state of anxiety and knowledge on the topic. (Burns & Grove 2005)

Section: I Literature related to level of knowledge and anxiety on Magnetic Resonance Imaging

Sin HK (2013) conducted a study subjects were recruited by randomly sampling the patients receiving radiological examinations, stratified on age, sex and education. The questionnaire was in Chinese and consisted of 28 questions mostly in multiple choice/true-or-false format, divided into three sections examining demographic data, radiation knowledge/awareness and expectation total of 173 questionnaires were returned (83 females and 84 male; mean age of 53). Of these, 32.6% had attended college, 32.6% had completed matriculation and 24.4% Secondary School. Most subjects underwent CT (75), MRI (70) and PET-CT (18). Education significantly affected the radiation knowledge (P=0.013). 60.7% and 32.7% were not aware of the radiation-free nature of MRI respectively. 45.4% and 43.5% were of the misconception that Barium enema and Barium swallow studies do not involve radiation. Moreover, 77.6% and 87.9% were aware of the radiation-laden nature of CT and plain X-rays, respectively. Furthermore, 34% and 50%, respectively, think that they are not exposed to radiation at home and on a plane. Regarding the fatal cancer risk from CT, 17.8% chose the correct

answer and 62% underestimated the risk. 32.2% correctly estimated the equivalent dose of CT in terms of number of conventional X-rays and 43.2% underestimated the dose. Most (98.2%) were told of the indication, and 42.7% were told the associated radiation dose.

Shan Sheen (2009) Conducted a study on empirical data from our lab gained from 70 neurologically healthy mainly student subjects and from 22 mainly elderly patients suffering from motor deficits after brain damage. All participants took part in various basic researchMRI studies using a 3T MRI scanner. Directly after the scanning, all participants completed a questionnaire assessing their experience with the MRI procedure. 87.2% of the healthy subjects and 77.3% of the patients rated the MRI procedure as acceptable to comfortable. In healthy subjects, males found the procedure more comfortable, while the opposite was true for patients. 12.1% of healthy subjects considered scanning durations between 30 and 60 min as too long, while no patient considered their 30 min scanning interval as too long. 93.4% of the healthy subjects would like to participate in an fMRI study again, with a significantly lower rate for the subjects who considered the scanning as too long. Further factors, such as inclusion of a diffusion tensor imaging (DTI) scan, age, and study duration had no effect on the questionnaire responses. Of the few negative comments, the main issues were noise, the restriction to keep still for the whole time, and occasional feelings of dizziness.

Roger Davis (2012) Conducted a prospective survey of English speaking out-patients undergoing either non-oncology CT of the chest abdomen pelvis or non-obstetrical ultrasound (US) examinations was completed between items such as preferences on result communication, knowledge of a radiologist and anxiety

prior to and after radiologist-patient consultation were recorded. Average wait and duration of consultation was documented. Eighty-six patients (43 male, mean ages is 52) enrolled (37 CT and 49 US exams). 48 (56%) identified a radiologist as a physician who interprets imaging. 70 (82%) preferred hearing results from both ordering provider and radiologist which increased to 78 (91%) after consultation (p=0.03). Prior to and after consultation, 84 (98%) and 85 (99%), respectively, indicated they would be comfortable hearing normal or abnormal results from the radiologist. 85 (99%) agreed that reviewing their exam with a radiologist was helpful. 84 (98%) indicated having option of reviewing or always wanting to review future exams with a radiologist. Following consultation, anxiety decreased in 41 (48%), increased in 13 (15%) and was unchanged in 32 (37%) (p=0.0001).

Magnetic Resonance Imaging is a (MRI) is a non-invasive diagnostic procedure; it is considered painless, but between 25% of patients undergoing MRI experiences moderate to level of anxiety and 56.40% terminate their scan prematurely. Besides patient discomfort it is known that patient who experience anxiety move more during scanning than do calm patient and this may have an effect on image quality.

Sine Mathew (2012) conducted the study on the subjective experiences of patients undergoing MRI. About 500 patient undergoing MRI were surveyed using a questionnaire before and after imaging. Anxiety was measured using the state anxiety component of the State Anxiety Inventory. All patients exhibited some degree of pre-imaging anxiety. Patients who experienced problem like fear, discontinuation of procedure during MRI had pre- imaging anxiety level similar to that of pre-operative anxiety.

Meera Raj. M (2010) conducted the study on 40 patients undergoing MRI. 95%of the patients completed the procedure, and 37% reported moderate to severe anxiety. This study also revealed that anxiety in patients undergoing MRI is a multifaceted phenomenon involving fear of closed places, pain, the unknown and apprehension about what the test might reveal. And this study recommended that the best way to avoid traumatizing the patient is to assess these variables before the procedure.

Karan Kumar (2010) conducted the study on patients, perceptions of magnetic resonance imaging. The objective of this study was to further assess the subjective experiences of patients undergoing Magnetic Resonance Imaging in an attempt to identify those patients likely to have problems and factors affecting their experiences. 500 consecutive patients undergoing Magnetic Resonance Imaging were surveyed using questionnaires before and immediately after imaging. Anxiety was measured using the state anxiety component of the state – trait anxiety inventory. All patients exhibited some degree of pre –imaging anxiety.

Manhunt Menorah (2010) conducted a study to assess the differences in anxiety level of patients who received instruction prior to Magnetic Resonance Imaging compared to a control group that did not. Thus, 60 patients were randomly assigned to two groups. Patients who received the designed instructions reported significantly lower levels of anxiety than the controls. The finding also indicated that 60% of the total sample used prayer to reduce anxiety. The study emphasizes the need for detailed information about the procedure and training in relaxation techniques.

Solomon (2010) conducted a study that on failed magnetic resonance imaging examination due to claustrophobia. A recognized cause of incomplete or cancelled Magnetic Resonance Imaging examinations is anxiety and claustrophobic symptoms in patients undergoing Magnetic Resonance Imaging. To determine the incidence of failed magnetic resonance imaging examination among our patients and if there are any associations with a patients sex, age and education level , they studied claustrophobia that led to premature termination of the Magnetic Resonance Imaging examination in 3324 patients over 28 months. The incidence of failed Magnetic Resonance Imaging examinations due to claustrophobia was found to be only 0.54% there are associations between levels of education.

Suresh (2010) conducted a study among adolescents "prior knowledge about medical imaging and their degree of cooperation with imaging procedures. A cohort of 120 adolescents, undergoing imaging for the first time, completed five brief questionnaires. While waiting to be called for Magnetic Resonances Imaging computerized tomography examinations, cooperation was observed independently by two observes. The result showed a correlation between adolescents coping styles, their use of information about their treatment within the context of their coping mechanisms and their degree of confidence and anxiety. Adolescents with a low anxiety level cooperated more fully, it is concluded that an association between coping style, knowledge and anxiety.

Simon (2010) conducted a study was done on re-education of anxiety during Magnetic Resonance Imaging. In this study 60 patients underwent brain and spinal scanning, with limited information given in advance. 50 experimental patients received booklet information about the scanning and advice on cognitive

strategy for anxiety reduction. Anxiety was measured before, during and after scanning. Patients in the experimental group were significantly less anxious during scan than control patients.

Shiju Philip (2009) conducted study to examine fear induced by Magnetic Resonance Imaging in 80 patients who were undergoing Magnetic Resonance Imaging examination for the first time. Participants were assessed pre and post scan and 1 month follow up. It is reported that 25% of the participants experienced moderate to severe anxiety during magnetic resonance imaging.

Varna (2011) conducted an experimental study on the impact of extended written information on patient anxiety and image motion artifact's during MRI. In this study of a sample of 242, 118 patients who were undergoing MRI received routine information, and 124 were given written information. To measure patient anxiety before and during scanning self-report psychometric test STAI was used. After MRI examination, the patients answered a questionnaire on satisfaction with written information. The imaging were assessed with regard to motion artifacts, it was present in fewer patient images in the experimental group than in the control group. The finding of the study shows that extended written information has an impact on anxiety; it did help patients lie still during the MRI scan with a reduction in motion artifact's as a result.

Subash (2009) conducted a study to evaluate a relaxation intervention designed to prevent anxiety during MRI, and also it assessed the development of fears in patients who felt anxious during the procedure. Patients were assigned to a control group (n=52) and experimental group (n=43) who received relaxation before and during the scan. Compared to the control group patients, the experimental group who practiced relaxation showed a decreased anxiety level during the scan.

Sharma (2009) conducted a study on evaluation of three psychological interventions to reduce anxiety during MRI. Each of 50 subjects was randomly assigned to one of the intervention. Intervention 1 involved provision of information about the imager and nature of the examination. Intervention 2 included information and counseling. Intervention 3 included information and 12 minutes relaxation exercise. Anxiety levels were measured by means of a 20 item questionnaire before and after imaging. Group 3 showed significantly less in anxiety compared with those in group 1and 2. Group 1 showed a significant increase in anxiety during imaging.

A quasi-experimental was conducted by Department of Nursing in Taiwan to assess the long term effect of an audio visual relaxation training treatment involving deep breathing exercise, muscle relaxation, guided imagery and meditation and compared with routine nursing care for reducing anxiety, improving sleep and promoting relaxation among Chinese adults with cardiac disease. A convenience sample of 100 cardiology patients (41 treatments, 59 control) admitted to Medical Center Hospital in the Republic of China was studied for one year. The results reported that the hypothesized relationship and relaxation training ($P < .05$) improved anxiety, sleep and relaxation in the treatment group as compared to the control group. The study concluded that audio-visual relaxation training might be a beneficial adjunctive therapy for adult cardiac patients.

Rahul Sharma (2008) conducteda quasi-experimental study to assess the effectiveness of an information leaflet on knowledge and anxiety of the patients undergoing MRI. Among 110 patients, the study revealed that there was statistically signification reduction in the anxiety level of patients in experimental group, who used information pamphlet, compared to group. From the above

literature reviews it can be proved that better information can augment the success of any diagnostic invasive procedure and is essential for better compliance. The purpose of this study was to assess the success of Neuro linguistic programming in reducing the need for general anesthesia in claustrophobic patients who require MRI and to consider the financial implications for health providers. This was a prospective study performed in 2006 and 2007 at a teaching hospital in England and comprised 50 adults who had unsuccessful MRI examinations because of claustrophobia. The main outcome measures were the ability to tolerate a successful MRI examination after Nero linguistic programming, the reduction of median anxiety scores produced by Neuro linguistic programming, and models of costs for various imaging pathways. Neuro linguistic programming allowed 38/50 people (76%) to complete the MRI examination successfully. Overall, the median anxiety score was significantly reduced following the session of Neuro linguistic programming. In conclusion, Neuro linguistic programming reduced anxiety and subsequently allowed MRI to be performed without resorting to general anesthesia in a high proportion of claustrophobic adults. If these results are reproducible, there will be major advantages in terms of patient safety and costs.

A pre-experimental study was conducted by the Medical College of Georgia (2008) to test the Donovan Relaxation with Guided Imagery (RGI) and to investigate its effect on reducing state anxiety, as measured by the Spielberger State-Trait Anxiety Inventory (STAI). A sample of 33 Graduate nursing students were assigned and RGI script was administered three times, at two weeks intervals between sessions. The findings revealed thatstate anxiety levels were reduced in each of the three to previous levels into two weeks; and that trait anxiety levels were unchanged. Claustrophobia is common during MR scanning because of the

enclosed nature of cylindrical whole-body MR scanners. In our experience, this is exacerbated further by the use of surface coils, particularly when imaging the head and neck, even though one study claims that the level of anxiety is unrelated to the use of surface coils. The specific features that patients find most distressing are the spatial restriction, temperature, duration and the acoustic noise.

CONCEPTUAL FRAME WORK

Introduction

The conceptual framework is the precursor of a theory. It provides broad perspective for nursing practice, research and education. Conceptual frame work plays several interrelated roles in the progress of sciences. Their overall purpose is to make scientific studies meaningful and generalizable.

General system theory was first introduced by Von Bertanlanffy (1968). He described that general system theory in a set of inter-related part that come together to form a whole. Each part is an important component required to make a complete meaningful whole.

Von Bertalanffy (1968) defines system as an organized whole until that produces an effect or a product whose inter-dependent component parts interact.

Open system are those in which there is an organized whole unit that produces an effect or a product whose interdependent component parts interact with the environment. Open system are those in which there is an exchange of energy materials and information with the environment.

They are characterized by,

- INPUT of energy in-to the system.
- THROUGHPUT during which the system process changes and recognize imparted energy
- OUTPUT of energy in to the environment in the form of goods, services and intellectual products.

In this study the patients were considered as an open system as they receive information from an environment.

Input

The first component of the system is input which is the demographic variable and research developmental tools matter that enters into the system. For a system to work, well input should contribute to achieve the purpose of the system. In the present study it refers to knowledge of patients undergoing Magnetic Resonance Imaging scanning.

Throughput

It is the action needed to accomplish the desired task. Assess the level of knowledge and anxiety.

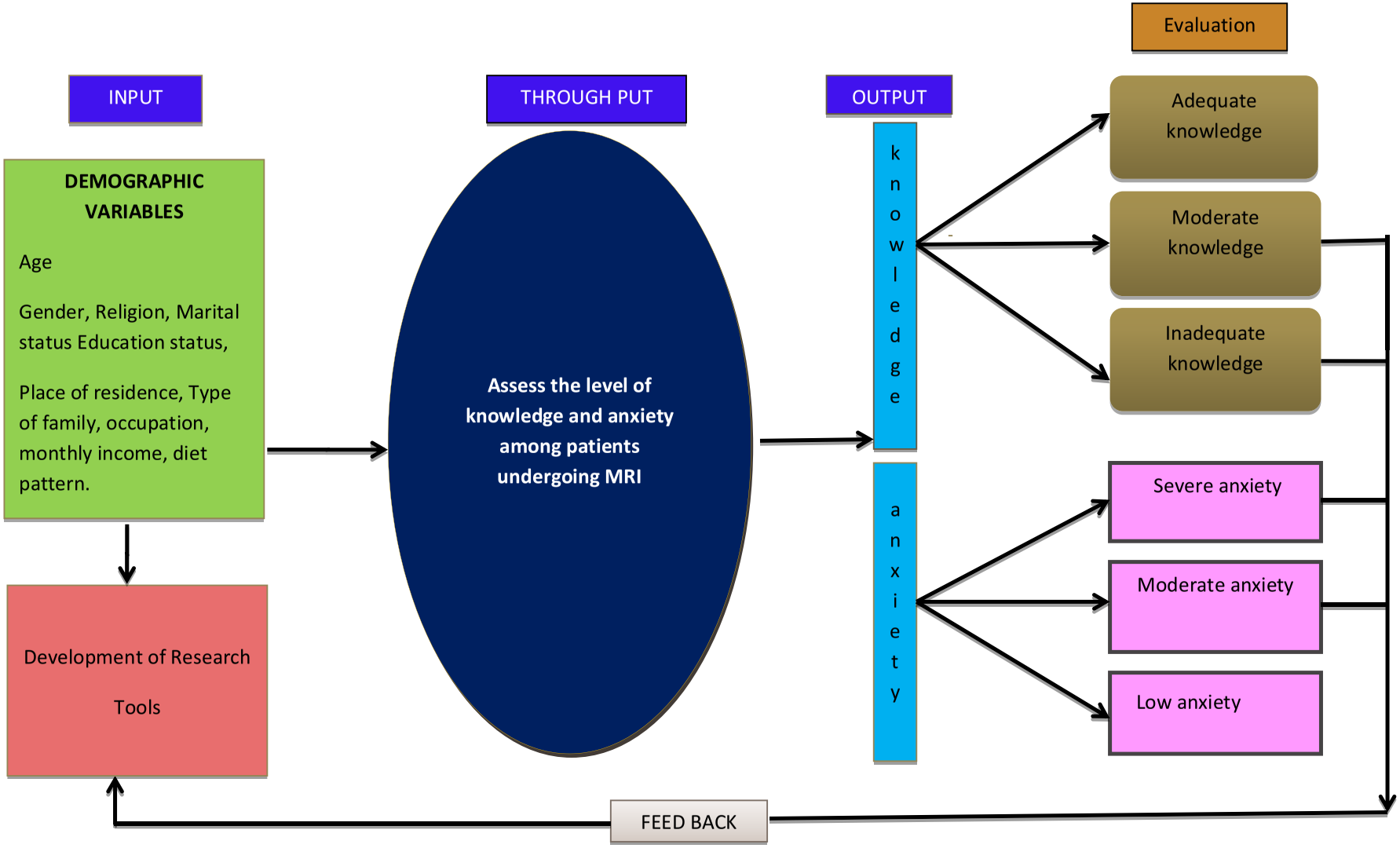
Output

It is the return of matter, energy and information to the environment in the form of physical behaviour. Output varies depending on the type and purpose of the system affecting the environment. In this study it refers to adequate knowledge and low anxiety among patients undergoing Magnetic Resonance Imaging.

Feed back

The feedback can be measured by the output whether they have adequate knowledge and low anxiety. Ifpatient adapt to the Magnetic Resonance Imaging scanning patients will not have much knowledge and anxiety. Failure of adaptation may occur, due to lack of support system and inadequate health care services that leads to rise in anxiety. The feedback is focused on the patient's knowledge and anxiety. It then inadequate knowledge and severe anxietyit refers that the systems input and through put has be re–evaluation

Figure -1 von bertalanffy's general system theory (1968)



CHAPTER III

RESEARCH METHODOLOGY

Methodology of research refers to the investigation of the ways of obtaining, and analyzing data. Methodological study addresses the development in validation and evaluation of research tools and methods.

Polit (2004)

It includes research approach, research design, sample, sampling technique and development of data collection instruments, method of data collection, pilot study, and plan for data analysis and protection of human rights.

The aim of the descriptive study was to assess the knowledge and anxiety among patients in MIOT International Hospital, Chennai.

Research approach

The research approach used in this study was the quantitative approach.

Research design

Descriptive research design was used for this study.

Setting

The setting selected for the study was Radiology unit of MIOT International Hospital which is 650 bedded hospitals. Radiology Department works between 9am to 4pm from Monday to Saturday. Approximately more than 30 patients attend the MRI unit every day.

Population

Adult patients undergoing MRI scan at the Radiology unit of MIOT International Hospital, Chennai.

Sample

The sample was patients undergoing MRI in Radiology unit at MIOT International Hospital, Chennai.

Sample size

The sample size for this study was 110 patients.

Sample technique

Sampling technique used for this study was non –probability convenient sampling technique.

Criteria for Sample collection

A) Inclusion criteria

- Adult patients undergoing MRI scan
- Those who are willing to participate in the study
- Able to read and understand English and Tamil.
- Both male and female patients.

B) Exclusion criteria

- Unconscious patients
- Critically ill and sedated.
- Those who have already undergone MRI.
- Patients wheeled in from emergency.

Data collection tool

Development of the data collection tool:

The data collection tool was developed through extensive review of literature, in consultation, discussion with the experts and with opinion of the faculty members and from the personal experience of the investigator.

Description of the tool

The data tool consists of two sections.

Part - 1

It consists of 10 demographic variables such as age, gender, marital status, occupation, religion, educational status, income, diet pattern, place of residence and type of family**.**

Part -2

Section-A

A Self- structured questionnaire consists of 10 questions related to MRI scan, each has four option one mark was given for the correct answer and zero was given for wrong answer.

Scoring procedure

- In adequate knowledge 1 - 50%
- Moderately adequate knowledge 51- 75%
- Adequate knowledge 76 -100%

Part-3

Questionnaire related to assess the level of anxiety by using Spielberger'sstate anxiety Inventory Scale. The state anxiety scale consists of 20 items.

Scoring pattern:

- Low : 25-50%
- Moderate : 51- 75%
- Severe: 76- 100%

Validity and Reliability

Validity:

Content validity was obtained by getting opinion from experts in the field of nursing and medicine.

To validate the English version of the Spielberger's state anxiety scale (STAI) in a sample of MRI patients with and without neurological symptoms. Validity and reliability were studied in patients with neurological symptoms and patients without neurological symptoms. Reliability was evaluated using the test – retest method and internal consistency was assessed using Cornbrash s alpha. Sensitivity to change was expressed as the effect size in the pre-intervention versus post-intervention score in additional patients with neurological symptoms who underwent MRI studies. Internal consistency was excellent. A high degree of internal consistency was observed for each of the 20 items with Cornbrash's Alpha Value = n value 110 while the Cornbrash's alpha for the total scores was 49.04. Test-retest correlation coefficients for the 20 item score were highly significant. Intra-class correlation coefficient was high (ICC=0.011 0.911). A high degree of sensitivity and specificity to the effects of treatment was observed. A high degree of significant level between baseline and post-treatment score was observed across nearly half of the items in surgical group but not in the non – neurological group. TAI is reliable, valid and sensitive to clinical change in a sample of patients with and without neurological symptoms.

Pilot Study

In order to check the feasibility, reliability and practicability of the study, a pilot study was conducted for one week from 5.1.15 to 17.1.15 with 6 samples, after getting approval from Ethical committee and permission from the radiology

unit in-charge, MIOT International Hospital, Chennai. The data was collected by the investigator using the anxiety scale. The result proved that the tool was valid and reliable, and then it is feasible to conduct the main study.

Data collection procedure

The data was collected for a period of 6weeks from 19.1.15 to 28.2.15.The data was collected from patients undergoing MRI at Radiology unit, MIOT International Hospitals, Chennai. The administrative permission, to conduct the study was obtained from the Head of the Department. The study population was MRI patients and through non-probability convenient sampling method, the investigator identified 110 MRI patients. The investigator initially established rapport with the MRI Patients and the purpose of the study was explained. The informed consent was obtained from the MRI patients. The demographic data was collected and knowledge and anxiety was assessed by using structured knowledge questionnaire and STAI anxiety scale. The data was collected by the investigator just before shifting the patients for Magnetic Resonance Imaging. The data collection was done from 19.1.15 to 28.2.15 (6day per week) as per the following schedule;

Data collection was done as per the following schedule:

N=110,

Dates	NUMBER OF SAMPLES
19-1-2015	4
20-1-2015	3
21-1-2015	2
22-1-2015	3
23-1-2015	2
24-1-2015	4
26-1-2015	3
27-1-2015	5
28-1-2015	2
29-1-2015	3
30-1-2015	3
31-1-2015	4
2-2-2015	3
3-2-2015	4
4-2-2015	3
5-2-2015	2
6-2-2015	3
7-2-2015	4
9-2-2015	2
10-2-2015	3
11-2-2015	3

Dates	NUMBER OF SAMPLES
12-2-2015	2
13-2-2015	2
14-2-2015	4
16-2-2015	3
17-2-2015	4
18-2-2015	3
19-2-2015	3
20-2-2015	2
21-2-2015	3
23-2-2015	4
24-2-2015	3
25-2-2015	4
26-2-2015	3
27-2-2015	2
28-2-2015	3

Human Right Protection

The pilot and main study was conducted only after approval of the research proposal by the College of Nursing and Institutional Ethical Committee. Permission was obtained from the concerned head of department to conduct the study. Informed consent was obtained from all the subjects participating in the study

CHAPTER IV

DATA ANALYSIS AND INTERPETATION

Analysis is defined as the method of organizing data in such a way that the research questions can be answered. Interpretation is the process of making sense of the results and of examining the simplification of the findings within a broader context.

-Polit and Beck, 2004

This chapter deals with analysis and interpretation of the findings. The aim of the study was to determine the level of knowledge and anxiety among the patient undergoing MRI. The data collected from patients undergoing MRI is presented as follows.

Section –I Distribution of demographic variables of patients undergoing MRI

Section –II Distribution of level knowledge among patients undergoing MRI.

Section –III Distribution of level of anxiety among patients undergoing MRI

Section –IV Correlation between overall knowledge and anxiety among patients undergoing magnetic resonance imaging.

Section –V: Association between level of knowledge and anxiety with selected demographic variables among patients undergoing Magnetic Resonance Imaging.

SECTION - I

This section describes the demographic variables of patients undergoing Magnetic Resonance Imaging.

Table1:Distribution of demographic variables among patients undergoing Magnetic Resonance Imaging.

N=110

Demographic Variables	No.	%
1**. Age in years**		
a. 18-30	23	20.9
b. 31-40	36	32.7
c. 41-55	36	32.7
d. 56-65	15	13.6
2. Gender		
a. Male	74	67.3
b. Female	36	32.7
3. Religion		
a. Hindu	85	77.3
b. Muslim	12	10.9
c. Christian	13	11.8
4. Marital Status		
a. Married	54	49.1
b. Unmarried	56	50.9
5. Educational status		
a. Illiterate	1	0.9
b. Primary School	6	5.5
c. Hr. Sec. School	29	26.4
d. Graduate & above	74	67.3
6. Place residence		
a. Urban	63	57.3
b. Rural	17	15.5

7. Types family status		
a. Nuclear family	47	42.7
b. Joint-family	63	57.3
8. Occupational status		
a. Government employee	38	34.5
b. Non-government employee	40	36.4
c. Businessman	13	11.8
d. Student	15	13.6
e. e. Housewife	4	3.6
9. Income		
a. <10,000	6	5.5
b. 10,001-20,000	28	25.5
c. 20,001-30,000	54	49.1
d. >30,000	22	20.0
10. Diet		
a. Pure-vegetarian	45	40.9
b. Non-vegetarian	40	36.4
c. Mixed	25	22.7

Table 1 reveals that majority of the participants were in the age group 41-55year i.e. 32.7%, 67.3% of them were male participants, 77.3% of them belongs to Hindu religion, 50.9% of them are unmarried, 67.3% of them are graduated and 57.3% of them live in urban, 57.3% of them belongs to joint family and 40.9% were pure-vegetarian.

SECTION - II

This section deals with level knowledge of patients undergoing Magnetic Resonance Imaging

N=110

Figure 2: Percentage distribution of level of knowledge among patients undergoing Magnetic Resonance Imaging

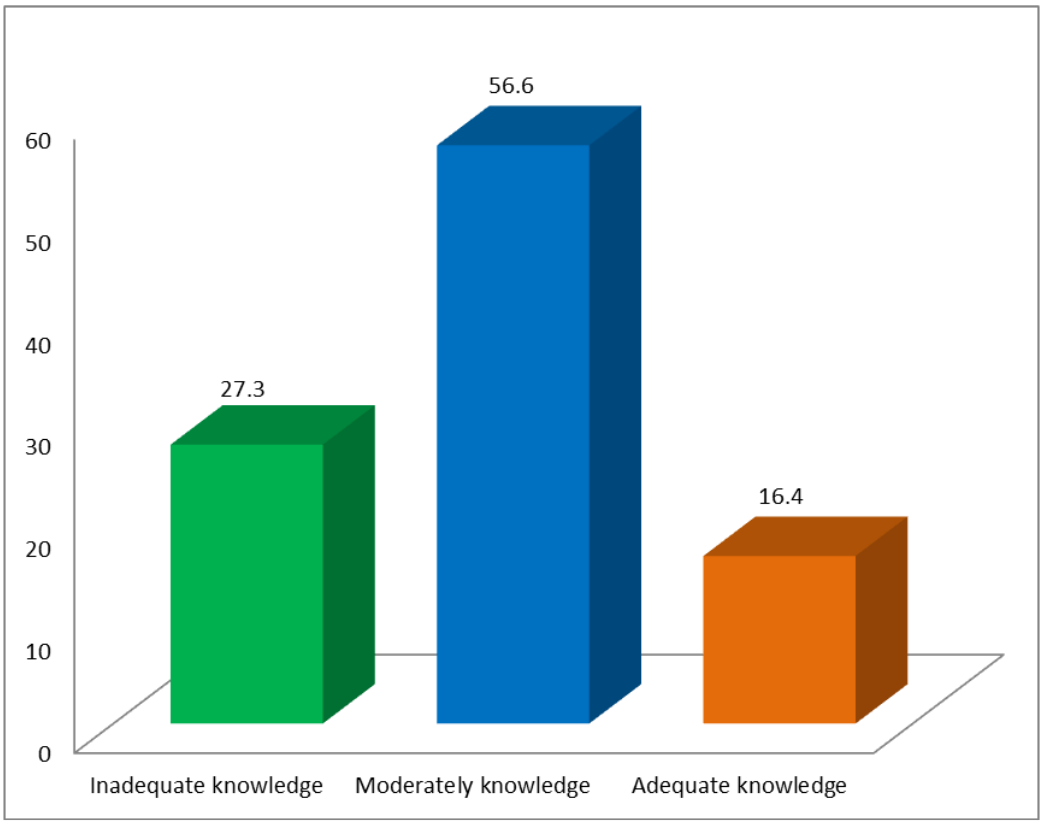


Figure: 2 reveals that 27.3% of patients had inadequate knowledge, 56.6% of patients had moderately adequate knowledge and only 16.4% of patients had adequate knowledge.

Table 2: Descriptive statistics for knowledge among patients undergoing Magnetic Resonance Imaging

N = 110

Knowledge Aspects	Mean	Standard Deviation	Range	
			Min	Max
Knowledge MRI	**57.18**	**18.58**	**10**	**90.0**

Table 2 reveals that the overall mean knowledge score was 57.18 with a standard deviation of 18.58.

SECTION -III

Figure: 2 Distribution of level of anxiety among patients undergoing Magnetic Resonance Imaging.

N=110

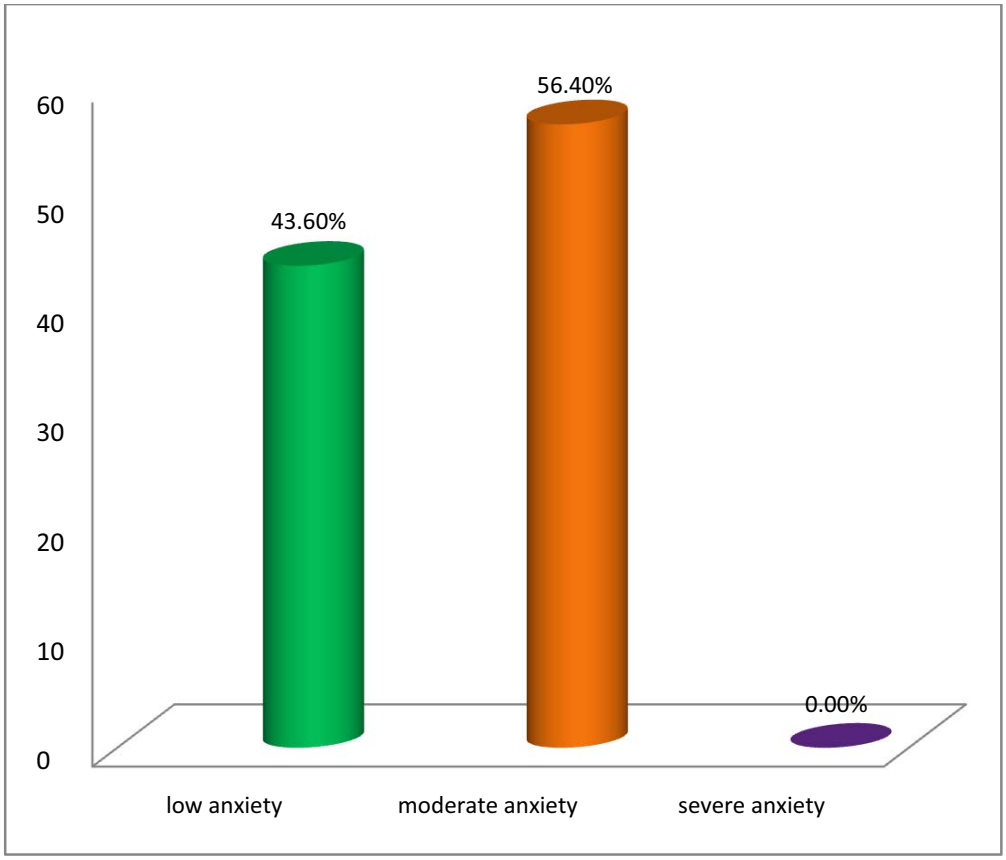


Figure - 2 reveals that 43.6 % of the patients had low anxiety, 56.4% had moderate anxiety and 0.0% of them had high anxiety.

Table: 3 Descriptive statistics for anxiety among patients undergoing Magnetic Resonance Imaging.

N=110

Anxiety Aspects	Mean	Standard Deviation	Range	
			Min	Max
Anxiety MRI	**49.04**	**11.08**	**28.75**	**71.25**

Table 3: reveals that the overall mean anxiety score was 49.04 with a standard deviation of 11.08.

SECTION -IV

Table: 4 Correlation between overall knowledge and anxiety among patients undergoing Magnetic Resonance Imaging

N=110

Correlation between compliance and risk status score	
n value	110
r value	0.011
P value	P=0.911 (Not Significant)

Table-4: reveals that the relationship between overall knowledge and anxiety 'r' value 0.011, 'p'value 0.911, There is no significant correlation at $p<0.05$ level.

SECTION - V

This section deals the association between overall knowledge and demographic Variables.

Table: 5 Association between knowledge of patients undergoing Magnetic Resonance Imaging with the selected demographic variables.

N=110

Demographic Variables	Inadequate		Moderate		Adequate		Chi Square Value & P Value
	No.	%	No.	%	No.	%	
1. Age in years							$\chi 2 = 3.561$,
a. 18-30	8	34.8	10	43.5	5	21.7	d.f = 6
b. 31-40	8	22.2	21	58.3	7	19.4	P=0.736 (N.S)
c. 41-55	11	30.6	21	58.3	4	11.1	
d. 56-65	3	20.0	10	66.7	2	13.3	
2. Gender							$\chi 2 = 10.381$,
a. Male	24	32.4	34	45.9	16	21.6	d.f = 2
b. Female	6	16.7	28	77.8	2	5.6	P=0.006 **
3. Religion							$\chi 2 = 4.587$,
a. Hindu	21	24.7	50	58.8	14	16.5	d.f = 4
b. Muslim	3	25.0	8	66.7	1	8.3	P=0.332 (N.S)
c. Christian	6	46.2	4	30.8	3	23.1	

4. Marital Status							$\chi 2 = 0.186$,
a. Married	15	27.8	31	57.4	8	14.8	d.f = 2
b. Unmarried	15	26.8	31	55.4	10	17.9	P= 0.911 (N.S)
5.Educational status							$\chi 2 = 6.263$,
a. Illiterate	1	100	0	0.0	0	0.0	d.f = 6
b. Primary School	0	0	5	83.3	1	16.7	P=0.394 (N.S)
c. Hr. Sec. School	9	31.0	17	58.6	3	10.3	
d. Graduate & above	20	27.0	40	54.1	14	18.9	
6. Place of Residence							$\chi 2 = 3.215$,
a. Urban	19	30.2	34	54.0	10	15.9	d.f = 4
b. Rural	4	23.5	12	70.6	1	5.9	P= 0.523 (N.S)
c. City	7	23.3	16	53.3	7	23.3	
7. Type Family status							$\chi 2 = 6.110$,
a. Nuclear family	12	25.5	23	48.9	12	25.5	d.f = 2
b. Joint-family	18	28.6	39	61.9	6	9.5	P=0.05 *
8. Occupational status							$\chi 2 = 11.017$,
a. Government employee	10	26.3	24	63.2	4	10.5	d.f = 8
b. Non-government employee	11	27.5	23	57.5	6	15.0	P=0.201 (N.S)
c. Businessman	6	46.2	4	30.8	3	23.1	
d. Student	3	20.0	7	46.7	5	33.3	
e. e. Housewife	0	0.0	4	100.0	0	0.0	
9. Monthly Income							$\chi 2 = 4.087$,
a. <10,000	3	50.0	2	33.3	1	16.7	d.f = 6
b. 10,001-20,000	7	25.0	15	53.6	6	21.4	P = 0.665 (N.S)
c. 20,000-30,000	15	27.8	33	61.1	6	11.1	
d. >30,000	5	22.7	12	54.5	5	22.7	

10. Diet							$\chi 2 = 7.931$,
a. Pure-vegetarian	6	13.3	29	64.4	10	22.2	d.f = 4
b. Non-vegetarian	15	37.5	20	50.0	5	12.5	P=0.094 (N.S)
c. Mixed	9	36.0	13	52.0	3	12.0	

Note: *- P<0.05, ** - P<0.01 Level of Significant, N.S. – Not significant

Table: 5 show that gender and family status are significant at p< 0.05. Age, religion, marital status, educational status, place, occupation, income and diet are not significant at p<0.05 level.

Table: 6 Association between anxieties of patients undergoing Magnetic Resonance Imaging with the selected demographic variables.

N=110

Demographic Variables	Low		Moderate		Chi Square
	No.	%	No.	%	Value & P Value
1. Age in years					$\chi 2 = 2.133$,
a. 18-30	10	43.5	13	56.5	d.f = 3
b. 31-40	13	36.1	23	63.9	P=0.545 (N.S)
c. 41-55	19	52.8	17	47.2	
d. 56-65	6	40.0	9	60.0	
2. Gender					$\chi 2 = 0.014$,
a. Male	32	43.2	42	56.8	d.f = 1
b. Female	16	44.4	20	55.6	P=0.905 (N.S)
3. Religion					$\chi 2 = 1.902$,
a. Hindu	39	45.9	46	54.1	d.f = 2
b. Muslim	3	25.0	9	75.0	P=0.386 (N.S)
c. Christian	6	46.2	7	53.8	
4. Marital Status					$\chi 2 = 0.878$,
a. Married	26	48.1	28	51.9	d.f = 1
b. Unmarried	22	39.3	34	60.7	P= 0.349 (N.S)
5. Educational status					$\chi 2 = 4.755$,
a. Illiterate	0	0.0	1	100.0	d.f = 3
b. Primary School	1	16.7	5	83.3	P=0.191 (N.S)
c. Hr. Sec. School	10	34.5	19	65.5	
d. Graduate & above	37	50.0	37	50.0	

6. Place of Residence					$\chi 2 = 0.991$,
a. Urban	27	42.9	36	57.1	d.f = 2
b. Rural	6	35.3	11	64.7	P= 0.609 (N.S)
c. City	15	50.0	15	50.0	
7.Type Family					$\chi 2 = 0.344$,
a. Nuclear family	19	40.4	28	59.6	d.f = 1
b. b. Joint-family	29	46.0	34	54.0	P=0.558 (N.S)
8. Occupational status					$\chi 2 = 1.100$,
a. Government employee	18	47.4	20	52.6	d.f = 4
b. Non-government employee	18	45.0	22	55.0	P=0.894 (N.S)
c.Businessman	5	38.5	8	61.5	
d.Student	5	33.3	10	66.7	
e. Housewife	2	50.0	2	50.0	
9. Income					$\chi 2 = 1.665$,
a. <10,000	3	50.0	3	50.0	d.f = 3
b. 10,001-20,000	12	42.9	16	57.1	P=0.645 (N.S)
c. 20,001-30,000	21	38.9	33	61.1	
d. >30,000	12	54.5	10	45.5	
10. Diet					$\chi 2 = 2.420$,
a. Pure-vegetarian	23	51.1	22	48.9	d.f = 2
b. Non-vegetarian	17	42.5	23	57.5	P= 0.298 (N.S)
c. c. Mixed	8	32.0	17	68.0	

Note: N.S. – Not significant

Table :6 shows that age, gender, religion, marital status, educational status, place, family status, occupational status, income, and diet are not significant at $p<0.05$level.

CHAPTER V

DISCUSSION

The present study is aimed at identifying the level of knowledge and anxiety of patients undergoing Magnetic Resonance Imaging. This is a descriptive study to assess the level of anxiety of patients undergoing Magnetic Resonance Imaging in MIOT International Hospital, Chennai.

Distributionof Demographic Variables among patients undergoing MRI.

Table: 1 reveals that the majority of the participants i.e, 32.7% were in the age group of above 41- 55 year, among them 67.3% of them were male and, 32.7% of them were female participants,77.3% of them belongs to Hindu Religion, 50.9% of them are unmarried, 67.3%of them are graduated, 57.3% of them are live in urban, 57.3%of them belongs to joint-family, 36.4% of them are Non-Government employee and, 49.1% of them had income of Rs>20,000.40.9%, were pure vegetarian.

The first objective was to assess the level of knowledge and anxiety among patients undergoing Magnetic Resonance Imaging.

A structured questionnaire was used to assess the level of knowledge among patients undergoing MRI in MIOT International hospital, Chennai. As per figure 1: 16.4% of the participants had adequate knowledge, 56.6% had moderately adequate knowledge and, 27.3% had inadequate knowledge.

Table2: reveals knowledge among patients undergoing MRI that the overall mean knowledge score was 57.18, with the standard deviation of 18.58.

A standard questionnaire was used to assess the level of anxiety among patients undergoing Magnetic Resonance Imaging. As per figure 2, 56.4% had

moderate anxiety on Magnetic Resonance Imaging and 43.60% had Low anxiety on Magnetic Resonance Imaging.

Table: 3 reveals that the overall mean anxiety score was 49.04 with the standard deviation of 11.08%.

Sini Mathew (2012) Conducted the study to assess the subjective experiences of patients undergoing MRI, About 500 patient undergoing MRI were surveyed using a questionnaire before and after imaging. Anxiety was measured using the state anxiety component of the State Anxiety Inventory. All patients exhibited some degree of pre-imaging anxiety. Patients who experienced problem like fear, discontinuation of procedure during MRI had pre-imaging anxiety level similar to that of pre-operative anxiety.

Simon (2010) conducted a study on reduction of anxiety during Magnetic Resonance Imaging. In this study 60 patients underwent brain and spinal scanning, with limited information given in advance. 50 experimental patients received booklet information about the scanning and advice on cognitive strategy for anxiety reduction. Anxiety was measured before, during and after scanning. Patients in the experimental group were significantly less anxious during scan than control patients.

The second objective was to find the correlation between overall knowledge and anxiety among patients undergoing Magnetic Resonance Imaging.

Table:5 reveals that the correlation between overall knowledge and anxiety score 56.4% with r'value=0.011, n'value =110, p=0.911, There is no significant correlation at $p<0.05$ level.

A study was conducted by the Department of Psychologyto investigate MRI related phobia and identify risk factors for claustrophobia development. A

sample of 108 subjects who had never had a scan, 57 males and 51 females ranging in age from 19 to 72 years, mean age of 43 years evaluated before and after the scan and contacted for one month follow up. The results reported that pre-scan report of pain was significantly correlated with stopping the scan, the pre scan Fear Survey Schedule scores correlated significantly with reported claustrophobic feelings after scan and stopping the scan correlated significantly with follow up report of an increase in claustrophobic feelings. The study concluded that pre-scan pain and fear assessment may help predict and allow intervention in phobic response during and after the MRI scan.

Karan Kumar (2010) conducted the study on patients, perceptions of Magnetic Resonance Imaging. The objective of this study was to further assess the subjective experiences of patients undergoing Magnetic Resonance Imaging in an attempt to identify those patients likely to haveproblems and factors affecting their experiences.500 consecutive patients undergoing Magnetic Resonance Imaging were surveyed using questionnaires before and immediately after imaging. Anxiety was measured using the state anxiety component of the state–trait anxiety inventory. All patients exhibited some degree of pre–imaging anxiety.

The third objective was to fine out the association between level of knowledge and anxiety with selected Demographic Variables.

Table: 4 shows that gender and family status are significant at $p<0.05$. age, religion, marital status, education status, place, occupation, income and diet are not significant $p<0.05$ level.

Varma (2011) conducted an experimental study on the impact of extended written information on patient anxiety and image motion artifact's during MRI. In this study of a sample of 242, 118 patients who were undergoing MRI received

routine information, and 124 were given written information. To measure patient anxiety before and during scanning self-report psychometric test STAI was used. After MRI examination, the patients answered a questionnaire on satisfaction with written information. The imaging were assessed with regard to motion artifacts, it was present in fewer patient images in the experimental group than in the control group. The finding of the study shows that extended written information has an impact on anxiety; it did help patients lie still during the MRI scan with a reduction in motion artifact's as a result.

A pre- experimental study was conducted by the Medical College of Georgia (2008) to test the Donovan Relaxation with Guided Imagery (RGI) and to investigate its effect on reducing state anxiety, as measured by the Spielberger State-Trait Anxiety Inventory (STAI). A sample of 33 graduate nursing students were assigned and RGI script was administered three times, at two weeks intervals between sessions. The findings revealed that state anxiety levels were reduced in each of the three to previous levels into two weeks; and that trait anxiety levels were unchanged. Claustrophobia is common during MR scanning because of the enclosed nature of cylindrical whole-body MR scanners. In our experience, this is exacerbated further by the use of surface coils, particularly when imaging the head and neck, even though one study claims that the level of anxiety is unrelated to the use of surface coils. The specific features that patientsfind most distressing are the spatial restriction, temperature, duration and the acoustic noise.

CHAPTER VI

SUMMARY, CONCLUSION, LIMITATIONS, IMPLICATION AND RECOMMENDATIONS

This chapter presents the summary, findings and conclusion of the study, the implications for nursing practice and recommendations for further study.

Summary

A Descriptive Study to assess the level of knowledge and anxiety among patients undergoing Magnetic Resonance Imaging in selected Hospital, Chennai.

The following objectives were set for study

1. To assess the knowledge and anxiety among patients undergoing Magnetic Resonance Imaging.
2. To correlate the knowledge and anxiety among patients undergoing Magnetic Resonance Imaging.
3. To findout the association between selected demographic variables with level of anxiety and knowledge among patients undergoing Magnetic Resonance Imaging.

The conceptual framework of the study was von bertalanffy's general system theory A descriptive research design was used for this study. A non-probability convenient sampling technique was used to select the samples. The tool used for data collection was structured Spielberger'sState anxiety scale and Demographic Variables.

Non–probability descriptive statistics (frequency, percentage, mean and standard deviation and chi square) and inferential statistics (paired test and correlation) were used.

The major finding of the study as follows;

Among patients undergoing Magnetic Resonance Imaging structured questionnaire majority of the participants were in the age group 41 -55 year i.e.32.7%, 67.3% of them were male participants, 77.3% of them belong to Hindu religion, 50.9% of them are unmarried, 67.3% of them are graduated and 57.3% of them live in urban, 57.3% of them belongs to joint-family and 40.9% were pure-vegetarian.

Distribution of level of knowledge 27.3% of patients had inadequate knowledge, 56.6% of patients had moderately adequate knowledge and only 16.4% of patients had adequate knowledge.

Distribution of level of anxiety among patients 43.6% of the patients had low anxiety, 56.4% had moderate anxiety and 0.0% of them had severe anxiety.

Descriptive statistics for overall mean knowledge score was 57.18 with a standard deviation of 18.58.

Descriptive statistics for the overall mean anxiety score was 49.04 with a standard deviation of 11.08.

Correlation between overall knowledge and anxiety ‘r’ value 0.011, ‘p’ value 0.911, there is no signification correlation at $p<0.05$ level.

There was significant gender and Type Family Status,at $p<0.05$ level. Association between knowledge among patients undergoing Magnetic Resonance Imaging with the selected demographic variables.

There was no significant at $p<0.05$ level. Association between anxieties among patients undergoing magnetic resonance imaging with the selected demographic variables.

Conclusion

Descriptive study was conducted to assess the level of knowledge and anxiety among patients undergoing Magnetic Resonance Imaging in selected hospital in Chennai. The objectives were framed according to the study. The research significant correlation between the knowledge and anxiety among patients undergoing MRI $p<0.05$ level There is asignificant association between selected demographic variables with level of knowledge and anxiety among patients undergoing Magnetic Resonance Imaging. There is no significant correlation at $p<0.05$ level. An extensive review of literature was done and perfect guidance by many of the experts formed the foundation to the development of the study instrument. The conceptual framework of the study was developed on the basis of venbertalanffy's general system theory. A quantitative research approach was used. The population consisted of patients undergoing MRI and the sampling technique used was non-probability sampling technique. A self–structured administered questionnaire was to assess the level of knowledge and anxiety of the patients. The study was conducted in selected hospitals at Chennai. 110 samples are selected for the study. The study showed that there was moderately level of anxiety of patients undergoing MRI. There was a no significant association between the level of anxiety at $P<0.05$. The study also showed that there was association between the level of anxiety of patients undergoing MRI with the selected demographic variables with correlation between compliance and risk status score with r' value=0.011, n'value =110, p=0.911, There is no significant correlation at $p<0.05$ level.

Limitation

The study was limited to patients undergoing MRI.

- The study was limited to 110 samples, so generalization of study findings could not be possible.
- The study was limited to patients between 18-65 years undergoing MRI in MIOT International Hospitals, Chennai.

Nursing Implication

The finding of the study have implications in different branches of Nursing profession i.e., Nursing practice, Nursing education, Nursing administration and Nursing research.

Nursing Practice

The staff nurse plays a vital role the study start that there is inadequate knowledge about Magnetic Resonance Imaging and patients shows moderate level of anxiety before undergoing Magnetic Resonance Imaging. Health education is an important aspect of nursing practice. The Nurse administrator can prepare the real picture of the MRI and educate the patients whenever the patient needs education regarding MRI. This study helps the Nurse to give an effective teaching picture for better understanding of level of anxiety of patients undergoing MRI. Educating the clients regarding MRI is an essential component.

Nursing Education

With the emerging problem as increase in incidence of defaulted treatment and Nursing Education programmes should incorporate practices in the Nursing Curriculum. Nurse Educator should encourage the patients to learn on how to develop the knowledge and desirable attitude and skill has prescribed health education which is an integral part of innovation methods nursing care. Health education is more effective when the facts are expressed with visual clues and health care trends. Nursing education should be focused on the importance of the

various investigations among the patients. Hence the Nurse Educator should educate the patients about MRI and provide study material for quality assured Nursing Care. Nurse Educator should take initiative to publish certain articles in journals related to the importance of MRI. Hospital and other Care Agencies.

Nursing Administration

The Nurse Administrator should take the initiative in creating standard protocols and congruent to the standard methods of caring patients. The Nurse Administrator should encourage and provide facilities to conduct health education for teaching patient about MRI. The Nurse Administrator must also organize in-service educational programs, workshops, symposium and skill training programs periodically to update the knowledge and anxiety skill of Nurses on care of patients. The Nurse Administrator should conduct research assess the level of knowledge of determine research findings. The Nurse Administrator must make sure that, educational and informational material should be displayed in out-patient Departments. Periodicallyto update the knowledge of patients undergoing MRI through different teaching methods, thereby helping them to learn more about anxiety.

Nursing Research

Evidence based Nursing practice must take a higher profile in order to increase awareness of patients MRI. This study shows the areas which need further studies in this area. The finding of the study may help to expand knowledge upon which further research can be conducted on the same topic in various setting. Nurses can conduct research on prevalence in the rural areas and in urban areas and can make comparative study whether massage on reached on

these areas similarly. The nurses should import knowledge and anxiety undergoing Magnetic Resonance Imaging.

Recommendations

Based on the finding of the present study, the following recommendations are made:

- A similar study can be conducted fora large samples, size to validate the findings and to make generalizations.
- A comparative study using different techniques can be conducted to assess the moderate anxiety level.
- A descriptive study can be done in this aspect.
- A similar study can be done by using various methods of teaching aids like self.
- A similar study can by conduct on level of knowledge and anxiety of the patients undergoing Magnetic Resonance Imaging.
- A similar study can be in different people like Security guards, Sales persons, Teachers, and Nurses etc.
- The study can be replicated in different setting with similar facilities.

REFERENCES

- Agrawal,L.P(2006) Modern Educational Research. (1st ed.) New Delhi, Dominant Publishers and Distributors.
- Basavanthappa, B.T (2007) Nursing Research. (2nd ed)Calcutta, Jaypee Publications.
- Black, J.M& Hawks, J.H. (2001) Medical-Surgical Nursing. (7th ed) New Delhi, Elsevier Publications.
- Davidson (2006) Text book of Principles and Practice of Medicine. (20th ed) Philadelphia, Churchill Livingstone Elsevier Publications.
- De Wit, S.(1988) Essentials of Medical-Surgical Nursing. (4th ed)New Delhi, Saunders Publications.
- Gupta, S.T (2001) Statistical Methods (5th ed) New Delhi, Sultan and Chand Son,s Publishers.
- Hargrove, R.A (2004)Medical-Surgical Nursing: An Ideal Study Guide (1st ed)Lippincott Wilkins and Williams Publication.
- Harrison, (2008) Principles of Internal Medicine (17th ed) USA, McGraw Hill Companies Publications.
- Ignatavicius, D.D (2010) Medical- Surgical Nursing, New Delhi, GH Publications.
- Jacob. A. (2007) Clinical Nursing Procedure; The Art of Nursing Practice (1st ed) Jaypee Brothers Medical Publications.
- Kotheri G.R (2000) Research Methodology. (2nd ed) New Delhi, ViswaPrakasam Publishers.

- Lewis, Heitkemper, Dirksen, O, Brien & Bucher. (2009) Medical-Surgical Nursing.

  (7st ed)New Delhi, Mosby Publications.
- Lemone, P& Burke, K.M. (2010) Medical-Surgical Nursing (1st ed) Philadelphia, Elsevier Publications.
- Long, Phillips & Cassmeyer (1993) Medical-Surgical Nursing- A Nursing Process Approach (3rd ed) New Delhi, Mosby Publications.
- Mahajan, B.K (1991) Methods in Biostatistics (1st ed) Jay pee Publications.New Delhi, Mosby Publications.
- Polaski, A.L&Tatro, S.E (1996) Luckmann,s Core Principles and Practice of Medical-Surgical Nursing (4th ed)W.B Sanunders Publication.
- Prabakar, G. N (2006) Biostatistics (1st ed) New Delhi, Jay pee Publishers.
- Ranjit, K (2005) Research Methodology (2nd ed) New Delhi, Pearson Education
- Rao, S (2001) Introduction to Biostatistics and Research Methods (4th ed) Delhi Prentice Hall Publications.
- Ross and Wilson (1998)Anatomy and Physiology (8th ed) Philadelphia 'Churchill Livingstone Publication.
- Royle, A.J (1994) Watson's Medical-Surgical Nursing and Related Physiology (4th ed) Balliere Tindal Publishers.
- Smeltzer,S.C & Bare, B (2005) Brunner & Suddarth's Text Book of Medical-Surgical Nursing (10th ed) Philadelphia, Lippincott William's Publication.

- World Health Organization (2012)"Global Report of Hypertension".Retrived fromhttmaryp:// www. Who int/ht/publications/ gobal report/2012/gtbr 12 executive summary.pdf.
- SundarRao, P.S.S (2001) Introduction To Biostatistics and Research Methods.(4th ed.) New Delhi, Prentice Hall of India Pvt. Ltd.
- Gogulnath. S.N.A Study to Assess the Risk Status of Stroke among Old age.

  People:The Indian Journal of Nursing. Pg No:35.
- Timeby, BK& Smith, N.E (2007) Introductory Medical-Surgical Nursing. (9th ed)Philadelphia, Lippincott Williams and Wilkins Publications.
- Timothy et al. (2009) Applied Therapeutics: The Clinical Use of Drugs. Philadelphia, LippincoottWillams&Wilkins.
- Treece, E.W (1982) Elements of Research (3rd ed) C.V Philadelphia, Mosby Publications.
- White, C.& Duncan, G (2002) Medical-Surgical Nursing (2nd ed) New York, Delmar Thomson Learning Publishers.

APPENDIX 1

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

From:

P. Raman,

II[nd] Year MSc Nursing,

MIOT College of Nursing,

Chennai .

Forwarded through

Prof .Mrs. Jayasri, M.Sc, Nursing, M.Phil., Ph.D.,

Principal.

To:

The Head of the Department,

Department of Radiology,

MIOT International Hospital,

Chennai 89.

Subject: Requesting permission to conduct research in MIOT International Hospital.

Respected Sir/Madam

As part of M.Sc., (N) requirement under the partial fulfillment of Tamil Nadu Dr. M.G.R. Medical University, I am conducting a research on "A study to assess the level of knowledge and anxiety among patients undergoing Magnetic Resonance Imaging in selected hospital, Chennai".

So I kindly request you to permit-me to conduct the study in Radiology Department in MIOT International Hospital.

Thanking you

Yours sincerely

P. Ry

Raman .P

MIOT HOSPITALS
DEPARTMENT OF RADIOLOGY
Dr. MURALI K
Reg. No: 47183

LETTER SEEKING EXPERT OPINION TO COMPUTE THE CONTENT VALIDITY OF THE TOOL

From

Mr. Raman .P

MSc (N) I Year,

MIOT College of Nursing,

To

Forwarded through

Prof.Mrs.N. Jayasri,. M Sc(N), M Phil, PhD,

MIOT College of Nursing,

Chennai.

Respected Sir/Madam:

Subject: Requesting expert opinion for content validation of research tool-Reg

I,Mr. Raman.P, MSc(N) Istyear student of MIOT College of Nursing, affiliated to Dr. M.G.R Medical University, Chennai is conducting a study to assess the level of knowledge and anxiety among patients undergoing Magnetic Resonance Imaging at selected Hospital, Chennai.

Thanking you

Yours sincerely,

(Raman .P)

RESEARCH INFORMED CONSENT FORM

I am RAMAN .P,M SC., Nursing IIst year student at MIOT College of Nursing, Chennai.

As part of my Research Study descriptive study to assess the level of anxiety of the patient undergoing MRI in selected Hospital, Chennai. The findings of the study will be helpful to assess the level of knowledge and anxiety of the patient undergoing MRI.

I,hereby seek your consent and co-operation to participate in the study. Please be frank and honest in your response. The information collected will be kept confidently and anonymity will be maintained.

Signature of the Investigator

I _____ hereby consent to participate and undergo the study

Place:

Date:

Signature of the Participant

APPENDIX – II

TOOL

Mark a tick against the answer of yours choice

Section-1: Demographic variables

1.Age (in year)

a.18-30 [ ]

b.31-40 [ ]

c.41-50 [ ]

2. Gender

a. Male [ ]

b. Female [ ]

3. Religion

a. Hindu [ ]

b. Muslim [ ]

c. Christian [ ]

4. Marital status

a.Married [ ]

b. Unmarried [ ]

5. Educational status

a. Illiterate [ ]

b.Primary School [ ]

c.Higher Secondary School [ ]

d. Graduate& above [ ]

6. Place of residence

a.Urban [ ]

b.Rural [ ]

c. City [ ]

7.Type of family

a.Nuclear family [ ]

b.Joint-family [ ]

8. Occupation

a.Government employee [ ]

b.Non-Government employee [ ]

c.Businessman [ ]

d.Student [ ]

e.Housewife [ ]

9 . Monthly Income

a.<10,000 [ ]

b.10,001 – 20,000 [ ]

c.>20,000 [ ]

10.Diet pattern

a.Pure-vegetarian [ ]

b.Non-vegetarian [ ]

Section - II

STRUCTURED KNOWLEDGE QUESTIONNAIRES

Mark a tick in the correct option:

1.What is a MRI

a.Magnetic Resonance Imaging [ ]

b.Magnetic Radio Imaging [ ]

c Modified Radio Imaging [ ]

d. Magnos Rays Imaging [ ]

2. How does MRI works

a. Uses Radio waves to scan [ ]

b. Uses Magnetic field and Radio waves [ ]

c. Uses Magnetic waves [ ]

d. Uses contrast medium to scan [ ]

3. Which of the following body structures areimaged in MRI

a. Organs, soft tissues and bone [ ]

b. Bones only [ ]

c. Muscles and soft tissues [ ]

d. Cavities [ ]

4. How long alcohol, smoking and caffeine beverages are restricted before the procedure?

a. 1 Hours [ ]

b. 2 Hours [ ]

c. 3 Hours [ ]

d. 4 Hours [ ]

5. Which one of the following is not the preparation for MRI?

a. Removal of jewellry, metallic objects [ ]

b. Voiding before MRI [ ]

c. Wearing hospital gown without metal closeness [ ]

d. Administration of anesthesia [ ]

6. What is the duration for MRI scan?

a. 10-15 min [ ]

b.15-30 min [ ]

c.30-60 min [ ]

d.>1 hrs [ ]

7.Which is the route the dye is administered during procedure

a.Oral [ ]

b. Intravenous [ ]

c. Arterial [ ]

d. Intramuscular [ ]

8. What is the pain level after MRI

a. Severe pain [ ]

b. Moderate pain [ ]

c. No pain [ ]

d. Mild pain [ ]

9.How long the patient must take rest after MRI?

a. 15-30 min [ ]

b. 30-60 min [ ]

c. 2 hours [ ]

d. Intermediately go for normal activities [ ]

10. What do you expect during MRI scan?

a. Hearing loud banging noise [ ]

b. Silence [ ]

c. Alarming sound [ ]

d. Speaking sound [ ]

SECTION III

SPIELBERGER S STATE ANXIETY SCALE

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is , at this moment. There are no right or wrong answers, do not spend too much tome on any one of the statement but give the answer which seems to describe your present feelings best.

S.NO	ITEMS	SCORE			
		Not At all	Some What	Moderately	Very Much
		1	2	3	4
1	I feel calm				
2	I feel secure				
3	I am strained				
4	I feel at ease				
5	I am tense				
6	I feel upset				
7	I am presently worrying over possible misfortunes				
8	I feel satisfied				
9	I feel frightened				
10	I feel comfortable				
11	I feel self –confident				
12	I feel nervous				
13	I am jittery				
14	I feel indecisive				
15	I am relaxed				
16	I feel content				
17	I am worried				
18	I feel confused				
19	I feel steady				
20	I feel pleasant				

சுய குறிப்பு

பகுதி 1

கீழ் கண்ட வினாக்காளுக்கு சரியான விடை அளிக்கவும்

1.வயது (ஆண்டில்)

அ. 18 - 30 [ ]

ஆ. 31 - 45 [ ]

இ. 46- 55 [ ]

ஈ. 56 - 65 [ ]

2. பாலினம்

அ. ஆண் [ ]

ஆ. பெண் [ ]

3. மதம்

அ.இந்து [ ]

ஆ. கிறிஸ்துவர் [ ]

இ. முஸ்லிம் [ ]

ஈ. பிறமதத்தவர் [ ]

4. திருமணதகுதி

அ. திருமணம் ஆகாதவர் [ ]

ஆ. திருமணம் ஆனவர் [ ]

இ. விவாகரத்து பெற்றவர் [ ]

ஈ. கணவர் மனைவி இழந்தவர் [ ]

5. கல்வி தகுதி

அ. படிக்காதவர் [ ]

ஆ. ஆரம்பகல்வி [ ]

இ. உயர்நிலைகல்வி [ ]

ஈ. மேல்நிலைகல்வி [ ]

6.வசிக்கும் இடம்

அ. கிராமபுரம் [ ]

ஆ.இடைநகரபுரம் [ ]

இ. நகர்புரம் [ ]

7.குடும்பவகை

அ. கூட்டுக்குடும்பம் [ ]

ஆ.தனிக்குடும்பம் [ ]

8. தொழில்

அ. வேலை இல்லாதவர் [ ]

ஆ. அரசாங்க வேலை [ ]

இ. தனியார் வேலை [ ]

ஈ. சுய வேலை [ ]

9. மாதவருமானம் (ரூபாயில்)

அ. 3000க்கும் கீழ் [ ]

ஆ. 3001 6000 [ ]

இ. 6001 9000 [ ]

ஈ. 9000க்கும் மேல் [ ]

10. உணவு வகை

அ. அசைவ உணவு உண்பவர் [ ]

ஆ. சைவ உணவு உண்பவர் [ ]

பகுதி 2

காந்த அதிர்வு வரைபடம் அறிவுதிறன் பற்றிய வினாக்கள்

கீழ் கண்ட வினாக்களுக்கு சரியான விடை அளிக்கவும்

1. காந்த அதிர்வு வரைபடம்(MRI) என்றால் என்ன?

அ. காந்த அதிர்வு வரைபடம் (MRI) [ ]

ஆ. காந்த பண்பலை வரைபடம் [ ]

இ. திருத்தபட்ட பண்பலை வரைபடம் [ ]

ஈ. காந்த கதிர் வரைபடம் [ ]

2. காந்த அதிர்வு வரைபடத்தின் (MRI) எதன் மூலம் வேலை செய்கிறது?

அ. ரேடியோ அலைகள் பயன்படுத்துகிறது [ ]

ஆ. காந்த அதிர்வுகள் மற்றும் ரேடியோ அலைகள் பயன்படுத்துறது [ ]

இ. காந்த அதிர்வுகள் மட்டும் பயன்படுத்துகிறது [ ]

ஈ. காண்ட்ராஸ்ட் மருந்து ஸ்கேன் மூலம் [ ]

3. காந்த அதிர்வு வரைபடம் (MRI) மனித உடலில் எந்தெந்த பகுதிகளில் எடுக்கப்படும்

அ. உடல் உறுப்புகள், எலும்பு, திசுக்கள் [ ]

ஆ. எலும்பு மட்டும் [ ]

இ. தசை, திசுக்கள் [ ]

4. காந்த அதிர்வு வரைபடம் (MRI) எடுக்கும் முன் புகையிலை, மது புகைப்பிடித்தல் எவ்வளவு நேரம் உபயோகிக்க கூடாது

அ.1 மணி நேரம் [ ]

ஆ. 2. மணி நேரம் [ ]

இ. 3 மணி நேரம் [ ]

ஈ. 4 மணி நேரம் [ ]

5. பின்வரும் எந்த தயார்படுத்தும் முறை காந்த அதிர்வு வரைபடம் (MRI) சோதனையில் முன்பு பின்பற்றப் படுவதில்லை?

அ. தங்க நகைகள் நீக்குதல் [ ]

ஆ.சிறுநீர்கழித்தல் [ ]

இ. ஆஸ்பத்திரியில் கொடுக்கப்படும் உடையை அணிதல் [ ]

ஈ. மயக்க மருந்து அளித்தல் [ ]

6. காந்த அதிர்வு வரைபடம் (MRI) எடுக்க எவ்வளவு நேரம் ஆகும்?

அ. 10 -15 நிமிடம் [ ]

ஆ. 15 -30 நிமிடம் [ ]

இ. 30 -60 நிமிடம் [ ]

ஈ. 1 மணி நேரம் மேல் [ ]

7. காந்த அதிர்வு வரைபடத்திமன்(MRI) போது பயன்படுத்தபடும் DYEயை **நோயாளியின்** உடலில் எதன் வழியாக செலுத்த வேண்டும்?

அ. வாய் வழியாக [ ]

ஆ. தமனி வழியாக [ ]

இ. நரம்பு வழியாக [ ]

ஈ. தசைகள் வழியாக [ ]

8. காந்த அதிர்வு வரைபடம் (MRI) எடுக்கும்போது எந்த மாதிரி வலி இருக்கும்?

அ. மிக அதிகமான வலி [ ]

ஆ. அதிகமான வலி [ ]

இ. வலி இல்லை [ ]

ஈ. சுமாரான வலி [ ]

9.காந்த அதிர்வு வரைபடம் (MRI) எடுத்த பிறகு **நோயாளி** எவ்வளவு **நேரம் ஓய்வு** எடுக்க வேண்டும்?

அ. 15 -30 நிமிடம் [ ]

ஆ. 30 - 60 நிமிடம் [ ]

இ. 2 **மணி நேரம்** [ ]

ஈ. ஓய்வு **தேவையில்லை** [ ]

10. காந்த அதிர்வு வரைபடம் (MRI) எடுக்கும்போது எந்த விதமான ஒலி ஏற்படும்?

அ. இடிக்கும் **ஓசை**,தட்டு **ஓசை** இருக்கும் [ ]

ஆ. அமைதியாக இருக்கும் [ ]

இ. எச்சரிக்கை ஒலி இருக்கும் [ ]

ஈ. முனுமுனுக்கும் ஒசை [ ]

SELF-EVALUATION QUESTIONNAIRE

STAI From Y-1

பிரிவு

பகுதி- இ

எண் குறிப்பு: கீழ்காணும் ஒவ்வொரு வாக்கியத்திற்கும் நீங்கள் "இப்போது இந்த சமயத்தில்" எப்படி உணர்கிறீர்கள் என்பதை வட்டமிட்டுக் காட்டவும். பதில்கள் சரியன்றோ, தவறன்றோ மதிப்பிடப்படமாட்டா. ஒவ்வொரு வாக்கியத்திற்கும் அதிக நேரம் எடுக்காமல் உங்களுக்கு சரியான உணர்வை குறிப்பிடுங்கள்.

	ஸ்பீல்பெர்கர்	மதிப்பு			
வரிசை எண்	பொருள்	எப்பொழுதும்	எப்பொழுதாவது	அடிக்கடி	எப்பொழுதும்
		1	2	3	4
1	நான் அமைதியாக இருக்கிறேன்				
2	நான் பாதுகாப்பாக இருக்கிறேன்				
3	நான் இறுக்கமாக உணர்கிறேன்				
4	நான் எளிதாக உணர்கிறேன்				
5	நான் பதட்டமாக உணர்கிறேன்				
6	நான் ஏமாற்றமாய் உணர்கிறேன்				
7	நான் வரப்பபோகும் துன்பங்களுக்கு இப்போதே கவலைப்படுகிறேன்.				
8	நான் திருப்தியாக இருக்கிறேன்				
9	நான் பயப்படுகிறேன்				
10	நான் சாந்தாமாய் உணர்கிறேன்				
11	நான் தன்னம்பிக்கையுடன் இருக்கிறேன்				

12	நான் பதட்டமாய இருக்கிறேன்				
13	நான் நடுக்கமாய் உணர்கிறேன்				
14	நான் முடிவெடுக்க இயலாமல் உணர்கிறேன்				
15	நான் நிம்மதியாக உணர்கிறேன்				
16	நான் நிறைவாக உணர்கிறேன்				
	நான் கவலைப்படுகிறேன்				
18	நான் குழப்பமடைகிறேன்				
19	நான் நிதானமாய் உணர்கிறேன்				
20	நான் மகிழ்ச்சியாக இருக்கிறேன்				